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THE ORDERING OF PRE-NOMINAL MODIFIERS IN ENGLISH.

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THE VARIOUS TYPES OF PRENOMINAL MODIFIERS IN ENGLISH ARE STUDIED WITHIN THE GENERAL FRAMEWORK OF A TRANSFORMATIONAL GRAMMAR. TWO DISTINCT, BUT INTERRELATED PROBLEMS ARE INVOLVED--THE DERIVATION OF EACH OF THE TYPES OF SINGLE MODIFIERS, EITHER TRANSFORMATIONALLY OR FROM CONSTITUENT STRUCTURE RULES, AND THE GRAMMATICAL IMPLICATIONS OF COMBINING THEM IN THE PRENOMINAL POSITION. EACH OF THE TWO PROBLEMS ARE DISCUSSED, FOLLOWED BY A GRAMMAR FRAGMENT CONSISTING OF CONSTITUENT STRUCTURE RULES, AND TRANSFORMATION RULES DESIGNED TO HANDLE SOME OF THE OBSERVED FEATURES OF GRAMMATICAL BEHAVIOR. IN PLACE OF A SAMPLE LEXICON, LEXICAL RULES ARE GIVEN WITH REFERENCE LISTS TO INDICATE JUST WHAT MORPHEMES ARE BEING REFERRED TO IN EACH RULE. (IT)

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Robert Brotzman
Division of Linguistics

RESULTATIVE VERBS AND OTHER PROBLEMS
Anne Yue Hashimoto
Division of Linguistics

PRE-NOMINAL MODIFIERS
Sandra Annear
Division of Linguistics

TWO ASPECT MARKERS IN MANDARIN
William S-Y. Wang
Division of Linguistics

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The Ordering of Pre-Nominal Modifiers in English

Sandra S. Annear

I. Introduction
II. Derivations
  A. Transformationally derived modifiers
    1. The "three-stage route"
      a. ADJ
      b. AJ
    2. "Incidental" modifiers
    3. Count noun modifiers
    4. Modifiers derived by nominalization
  B. Modifiers derived from CS rules
III. Ordering of Pre-Nominal Modifiers
  A. Tentative solution
  B. Clarification of minor points
  C. Discussion
IV. Rules
V. Reference Lists

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I. Introduction

This study will attempt to suggest how the various types of pre-nominal modifiers are derived in a transformational grammar of English.[1] Two distinct, but interrelated, problems are involved: the derivation of each of the types of single modifiers, and the grammatical implications of combining them in the pre-nominal position. Each of the two problems will be discussed, followed by a grammar fragment whose rules have been designed to handle some of the observed features of grammatical behavior.

For the sake of convenient reference, we will not include in its usual place what is normally referred to as "the lexicon," that is, the body of constituent-structure (CS) rules which may be considered as "very long disjunctive expansions of the lowest-level grammatical categories developed in the CS strings, yielding all the individual morphemes which have not yet been introduced."[2] Since this study will deal extensively with phenomena in which it will be necessary to know just what morphemes are being referred to, lexical rules will be found in Section V with the other reference lists.

It will be noticed that the rules contain no restrictions which will disallow such "unacceptable" phrases as loud circle, ancient baby, John is skinny in his new house, etc., nor is it felt that there should be any, since the "impossibility" of these phrases seems to be a semantic question and not a grammatical one.[3]

The conception of the design of a grammar and the form of the rules proposed here are both taken from Charles J. Fillmore, "The Position of Embedding Transformations in a Grammar."

II. Derivations

A. Transformationally derived modifiers

1. The "three-stage route"

This term will refer to the application of one embedding transformation and two single-based transformations, resulting in pre-nominal modifiers of various origins. The embedding transformation is the rela-

tive clause rule (ET-2), the two single-based transformations are the relative clause reduction rule (PST-4) and the obligatory transposition rule (PST-5). [5]

a. The CS rules might yield a terminal string of the form:

Det + N + Tns + BE + ADJ

in which the ADJ chosen was A:

The boy is tall.

If we attach a WH* to boy (PST-2) and embed this into a string like:

The boy is my brother.

we get:

The boy who is tall is my brother.

The relative clause reduction rule gives us:

The boy tall is my brother

and the application of the transposition rule yields:

The tall boy is my brother.

b. If, however, for ADJ we choose an AJ, then the AJ must be expanded by means of another embedding rule before these three rules may be applied (see ET-1). Thus, from a string such as:

X terrifies Y

we get either:

X is terrifying

or:

Y is terrified

In both cases, the underlined forms "have the structure AJ" [6] and the strings are eligible for the three-stage route.

c. This route may also be taken by the gerundive and participial forms of certain verbs. From:

The dog is barking.

we can derive:

the barking dog;

from:

The chair is broken

we can derive:

the broken chair;

and from:

The race has vanished.

we get:

the vanished race.

2. "Incidental" modifiers

A type of structural ambiguity is revealed in considering the following examples:

Today we will discuss the open vowels and the closed vowels.

The child first learns to distinguish between the open vowels and the closed consonants.

The relative clause source strings for the modifier-plus-noun phrases in the first example are:

The vowels which are open . . .

The vowels which are closed . . .

The phrases in the second example, however, are derived from appositive relative clauses:

The vowels, which are open, . . .

The consonants, which are closed, . . .

as is illustrated by the following paraphrase:

The child first learns to distinguish between the vowels, which are, incidentally, open, and the consonants, which are, incidentally, closed.

Thus the phrase the open vowels in the first example is grammatically distinct from the phrase the open vowels in the second. The distinction seems to be reflected in the stress pattern of (/ + ^) in the first sentence and (^ + /) in the second.[7]

It seems likely that the rules that will place this modifier in its pre-nominal position will reduce and transpose an appositive relative clause in a manner similar to that in which a restrictive relative clause is reduced and transposed, as discussed in II.A.1. As suggested in the preceding paragraph, it will be necessary to retain, throughout this process, the information concerning the type of relative clause from which the modifier originated, in order that the stress might be properly assigned. However, the rules to generate a string containing the appositive relative clause itself are not well understood.[8]

3. Count noun modifiers

There exist a number of modifier-plus-noun combinations in which the first element is a count noun (List 9). Except for the stress pattern of (^ + ´), there appears to be no grammatical difference between these and the compounds discussed at length by Lees. [9]

4. Modifiers derived by nominalization

A number of extremely interesting problems have arisen concerning the existence of a large group of modifier-plus-noun phrases derived not in the manner outlined in II.A.1., but from a sequence LY-word-plus-verb.

Some of these modifiers are, in fact, not normal ADJ words as we might have supposed, but appear in a pre-nominal position only as a result of having undergone a nominalization transformation from a source string containing an LY-word-plus-verb phrase. They may not appear in a predicate position as adjectives.

native speaker	←---- speaks natively
hasty retreat	←---- retreats hastily
immediate reaction	←---- reacts immediately
eventual dissolution	←---- dissolves eventually

These modifiers may also appear with nouns not derived from verbs:

hasty dinner	←---- dinner eaten hastily
eventual husband	←---- man she will eventually marry
native language	←---- language spoken natively

There is another set of modifiers which may appear in a pre-nominal position either by means of the three-stage route or by means of a nominalization. This fact, and the rules which underlie it, explains the two different interpretations given to such modifiers, by revealing the two structurally different relationships between them and the noun. For example, it will be noticed that, in the second member of each pair below, it is clearly not the case that the modifier is derived from a string having the shape N is ADJ.

generous man	←---- man is generous
generous support	←---- to support generously
vicious dog	←---- dog is vicious
vicious fight	←---- to fight viciously
conscious person	←---- person is conscious
conscious attempt	←---- to attempt consciously
clear glass	←---- glass is clear
clear understanding	←---- to understand clearly
angry woman	←---- woman is angry
angry retort	←---- to retort angrily
poor man	←---- man is poor
poor performance	←---- to perform poorly

(see List 11)

Formulation of a rule to accomplish this type of nominalization is difficult for two reasons.

First, in proceeding from an LY-word-plus-verb phrase to a modifier-plus-noun phrase, a nominalization process is visualized, which may, in some cases, involve attaching to the verb a symbol which will signal that the noun derived from that verb is to appear in the transformed sentence. It is not yet known just exactly how such a symbol would behave. Even less well understood is the transformation that will nominalize a dinner eaten hastily into a hasty dinner. It appears likely that this nominalization will be an embedding rule in which an undeveloped formative Nom, as in:

We grabbed a Nom.

would be rewritten as:

hasty dinner

from the string:

The dinner was eaten hastily.

Second, a solution to this problem must await an answer to the question of just what adjectives this LY may be added to. For example, it may be added to no words in the tentative class Aa, to some words in the tentative classes Ab and Ac, and to some words in class Mb. Does

this list of LY-words then correspond to Man adverbs? Does it correspond to that list which distinguishes transposable from non-transposable verbs (see List 6)? If the words in List 10 cannot appear in the predicate and can appear pre-nominally only as a result of a nominalization, then from where comes this base word to which we "add" LY? Finally, is the fact that a certain word may or may not take LY a grammatical fact?

B. Modifiers derived from CS rules

Certain so-called "adjectives" are not derived in the manner described above, but are generated at the CS level of the grammar. These will be called "Modifiers" (M) and may be grouped into six classes, according to the order in which they appear when combined (See rules CS-14 and -16 and List 12).

1. An Mf modifier must immediately follow the Det and precede all other modifiers, including those which are introduced transformationally.[10]

2. In class Me are found those modifiers whose semantic reference is a measure.

3. Class Md is made up of those modifiers which, semantically, refer to nationalities.

4. Mc is a class of mass nouns whose semantic reference is to a material.

5. An Mb modifier must immediately precede the noun and follow all other modifiers.

6. Ma modifiers may not be accompanied by any other modifiers.

Examples of CS-terminal strings with various M's chosen would include:

Mc Mb
steel dental equipment

Md Mc
Chinese straw hat

Mc Mb
six-page technical report

Mf Mb
principal foreign expenditure

Mf Md
leading American export

Mf Me
major two-week conference

Thus, a string containing any of these modifiers is structurally distinct from one containing an A modifier, as may be seen by the following facts:

1. M's cannot be conjoined with and as A's can.
2. Each M class corresponds at least roughly to a semantic class.
3. No M can appear as a predicate. [11]

III. Ordering of Pre-Nominal Modifiers

The phenomenon of the ordering of pre-nominal modifiers in English is significantly unique. Here we will suggest a tentative solution, propose answers to some long-standing questions, and discuss the significant uniqueness of the problem.

A. Tentative solution

The solution involves a conjoining rule which takes two strings containing transformationally derived modifiers and conjoins the modifiers with and, and a late rule which changes the and's (except the last one in a predicate phrase) to commas. The success of the rule depends, however, on a previous assignment of subscripts (see temporary rule CT-1), which define the order of the various elements when they are combined. The rule will insure that sentences like the following will be generated with modifiers in the "proper" order:

Ac Aa
A big black bear crossed the road.

Ab Aa
A furry white kitten jumped into my lap.

Ac Ab
A large juicy apple was on the table.

that is, in the order:

Ac Ab Aa

B. Clarification of minor points

There are certain items which will appear in the lexicon is such a way as to account for facts which might seem to disprove the rules given here.

1. Such phrases as:

little boy
old man
young lady
old maid

will each appear as one lexical item.

The little and the old in phrases like:

juicy little apple
dirty little pig
cute little dress
shaggy old horse
silly old dog

may be considered as suffixes to the preceding modifiers.

Thus the lexicon must recognize two words young, three words little, and three words old:

handsome young man	dirty little boy	wealthy old man
	juicy little apple	silly old dog
young frisky horse	little round box	old white house

2. The lexicon will also contain two words good. One may be used in the predicate:

The meal was good ------> the good meal
The baby is good ------> the good baby

but the other may not:

a good sharp knife
a good fast ball

The same analysis applies to pretty.

She wore a small pretty watch.

but:

That's a pretty small suitcase for all those clothes.

Similarly there are two words nice.

The girl is nice ------> she's a nice girl

but:

It's a nice big room.

In each of these examples, the second member of the pair will probably be generated as an Av which can "modify" an A.

3. There exist numerous cases in which a modifier may have two different relationships with the noun, one as an Mb modifier, the other as an A adjective. In the latter relationship the adjective can appear in the predicate, it can be "modified" by very, and it precedes an Mb, Mc, Md, or Me modifier.

Md: a constitutional amendment
A: a constitutional law

Mb: an Md American Mb technical report
A: a A technical Mb linguistic study

Mb: Md American Mb liberal opinion
A: a A liberal Md Hindu society

Mb: an Md American Mb religious convention
A: a A religious Md American family

Mb: a A deep Mb personal animosity
A: a A personal diary

Mb: a A deep Mb emotional problem
A: an A emotional, A sensitive child [12]

C. Discussion

A grammar-oriented study of the ordering of English pre-nominal modifiers reveals several paradoxical features.

The CS rule (16) in which M is expanded appears to explicate reasonably well the ordering which seems to prevail among those modifiers

which are not introduced transformationally. But the rule which sees to it that the transformationally introduced modifiers are properly ordered (temporary rule CT-1) is a unique one in the grammar. It appears to be necessarily ad hoc and inapplicable to any other grammatical phenomenon, since the order in which like constituents appear is not relevant in any other conjoined string. More important, the rule depends on assigning groups of morphemes to order classes (A_1, A_2, A_3). In A_2, not only do these groups of morphemes have no common property, but the Ab modifiers assigned to it belong to various already established grammatical categories, such as those set up to account for abstractness, or adjectival complements, or the ability to be modified by certain groups of adverbs.

But a stronger objection may be raised against the existence of order classes. The term "class" implies a grammatical property shared by all the members of a given group and not possessed by members of any other group. Such grammatical classes are, furthermore, determined as a function of the CS rules, and must therefore be contained as part of the derivational history of any given CS-terminal string; there must be a node from which any class may be said to descend. The order classes A_1, A_2, A_3, do not fit any of these requirements, and thus seem to violate the notion of "class" in the grammar.

Given the fact of ordering among modifiers, given a conjoining rule involving order classes, and given the "non-grammaticalness" of such a rule and of such classes, it may be concluded that ordering of transformationally derived modifiers is not a grammatical phenomenon. According to this analysis, then, the fact that a word in "class Ac" usually precedes one in Ab or Aa will be a stylistic convention, and rule CS-24 will replace temporary rule CS-24, and rule CT-1 will replace temporary rule CT-1.

IV. Rules

The purpose of this section is not to provide a complete grammar, but merely to outline some of the rules relevant to the problems of pre-nominal modifiers.

Constituent Structure Rules

1. S ----→ Nom + VP

2. VP ----→ (Prev) Aux + MV

3. MV ----→ BE + Pred
   Vb (ADJ + LY) (Adv)

The ADJ + LY introduced in this rule provides the basis for the distinction made between transposable and non-transposable verbs (see CS-12), as well as for the nominalizations discussed in Section II. A.4. This formulation is somewhat imprecise, because of the implication, which is false, as brought out in II.A.4., that LY may be added to any ADJ. This ADJ + LY differs from the Adv introduced in this rule in that the latter may be a phrase.

She sings $\underline{\text{cheerfully}}_{\text{ADJ LY}}$ $\underline{\text{in the morning}}_{\text{Adv}}$.

A late optional rule will reverse the positions of the verb and the ADJ + LY.

4. Vb ----→ Vtr + Nom
   Vintr
   Vin

5. Vintr ----→ Vil + Loc
   Vi2 + Mot

This rule indicates a distinction between the different types of intransitives. Only the progressive form of Vin may undergo the transposition transformation. Vil and Vi2 require the presence of adverbials, and may not shift to a pre-nominal position.

Vin: The dog is sleeping ------→ the sleeping dog
Vil: The baby is lying in the crib ------→ *the lying baby
Vi2: The man is going away ------→ *the going man [13]

6. Vin ----→ Vis / Vi

A distinction between two types of intransitives must be made in order for the grammar to generate such phrases as:

an escaped prisoner

from a string containing:

a prisoner has escaped.

The traditionally-termed "perfect tense" form of only verbs of the class Vis (verbs of changing status) may be transposed.

Vis: log has decayed ------→ decayed log

Vi: dog has barked ------→ *barked dog

7. Vtr ----→ Vt / ... / ...

Vt is a simple transitive verb.

8. Adv ----→ FOR + Nom / Tm / Man / Loc

9. Pred ----→ Nom / ADJ / Loc

10. Loc ----→ IN / UNDER + Nom / ON / HERE / THERE

11. Vt ----→ Vtn / ... / ...

Vtn is a simple object transitive verb.

12. Vtn ----→ Vt1
Vt2
Vt3
Vt4

At this point, according to Lees, [14] we may say that Vtn will be expanded later "into the various smaller and more particular classes of verbs required, such as, e.g., Vt32, ordinary transitives whose objects may be deleted but which may be distinguished from intransitives by their ability to form pre-nominal gerundive modifiers (arriving guests, but not *cooking woman)", or Vt2, for those verbs which may undergo the AJ transformation (ET-1).

However, it is also at this point that a significant problem arises. It is not the case that the passive form of just any Vtn verb may follow the three-stage route. There is a group of such verbs which may not be transposed to the pre-nominal position unless accompanied by an ADJ + LY.

a lighted candle
a broken chair
*a read book, but
a frequently read book
*a sent package, but
a hastily sent package

Significant is the fact that the two lists set up by this dichotomy (see List 5) correspond to none of the already established classes, and that, in fact, some classes have members in each list. As an example, consider two verbs from the class Vt32. The verb type appears in the list of transposable verbs:

a typed manuscript,

while the verb write appears in the list of those verbs transposable only with ADJ + LY.

*a written book, but
an expertly written book.

To resolve this difficulty, it appears that one of two views must be taken. Either the permissibility of transposing such verbs is not a grammatical problem, or there exists in the grammar some form of a system of simultaneous categories, in which a word can belong to more than one class at a time. More examples of this type must be examined before asserting which one of these alternatives is correct, but the remaining rules will not indicate this distinction.

13. Nom ⟶ NP + N^{0} (R)

R is a formative for relative clause. This rule will not apply if Nom is to be expanded in a nominalization transformation. [15]

14. NP ⟶ Pron / Name / Det (Mf) (M) N — not before R

15. N^{0} ⟶ sg / pl

16. M ⟶ Ma (Me) (Md) (Mc) (Mb)

17. N ⟶ Nm / Ncnt

Nm stands for mass noun, Ncnt for count noun.

18. Aux ⟶ Aux_1 (Aux_2)

19. Aux_1 ⟶ Tns (Modal)

20. Aux_2 ⟶ (Perf) (Prog)

21. Perf ⟶ HAVE + EN

22. Prog ⟶ BE + ING

23. Tns ⟶ pres / past

24. ADJ ----→ (Av) { AJ, Ac, Ab, Aa } temporary

24. ADJ ----→ (Av) { AJ, A }

AJ is the formative which accounts for the fact that verbs of class Vt2 behave like transformationally introduced modifiers with respect to position and to Av.

Av stands for a word which may modify an A modifier. Very little is yet known about the composition of this class. It will contain such words as very, quite, and rather, some ADJ + LY words such as completely, extremely, genuinely, and abundantly, as well as the ING-forms only of AJ modifiers like surprisingly and amazingly.

A is the symbol for adjective.

25. Det ----→ D + Q

26. D ----→ GEN, the, this, . . .

GEN is a formative for a genitive word.

Transformation Rules

Embedding Rules [16]

ET-1. AJ

Given a pre-sentence of the form

$$\frac{\text{Nom}'}{1} + \frac{\text{Tns}}{2} + \frac{\text{Vt2}}{3} + \frac{\text{Nom}''}{4}$$

apply the rule

$$\text{AJ} \longrightarrow \begin{cases} \text{ING} + 3 & (\text{if Nom} = 1) \\ \text{EN} + 3 & (\text{if Nom} = 4) \end{cases}$$

in the terminal string

Nom + Aux + BE (Av) AJ

It is interesting to note that while we want to derive:

a terrified rabbit crossed the road

from:

a rabbit was terrified,

we do not want to derive:

an amused expression crossed her face

from:

her expression was amused.

To the solution of this problem we might apply the fact that to each Vt2 verb corresponds a noun, implying the possibility of a source sentence like:

an expression of amusement crossed her face.

ET-2. Relative Clause

Given a pre-sentence of the form

$$\underset{1}{\underline{WH*U + V}}$$

apply the rule

$$R \longrightarrow 1$$

in the terminal string

$$X + NP + N^{O} + \underline{R} + Y$$

The notation $\underline{A*B}$ denotes a $\underline{B}$ whose left-most member is $\underline{A}$.

Many compatibility requirements must be satisfied.

ET-3. Genitive

Given a pre-sentence of the form

$$\underset{1}{\underline{Nom}} + \underset{2}{\underline{Tns + HAVE}} + \underset{3}{\underline{Det}} + \underset{4}{\underline{N + N^{O}}}$$

apply the rule

$$GEN \longrightarrow 1*Gen$$

in the terminal string

$$X + \underline{GEN} + N + N^{O} + Y$$

where $N + N^{O} = 4$

Rules in the phonological component will adjust:

Mary*Gen ----> Mary's
she*Gen ----> her
the dog*Gen ----> the dog's

Preliminary Simple Transformations

# indicates an obligatory rule

PST-1. Passive

$$\underset{1}{\underline{\text{Nom}}} \quad \underset{2}{\underline{(\text{Prev})\ \text{Aux}}} + \underset{3}{\underline{\text{Vtr}}} + \underset{4}{\underline{\text{Nom}}} + \underset{5}{\underline{X}} \longrightarrow$$

4 2 BE EN 3 5 (BY 1)

PST-2. WH Attachment

$$\underset{1}{\overline{X}} \quad \underset{2}{\left\{\begin{matrix}\underline{\text{Nom}} \\ \underline{\text{Adv}} \\ \underline{\text{Loc}}\end{matrix}\right\}} \quad \underset{3}{\overline{Y}} \longrightarrow 1 \ \text{WH*2} \ 3$$

PST-3. WH-word Shift

$$\underset{1}{\underline{X}} + \underset{2}{\underline{\text{WH*Y}}} + \underset{3}{\underline{Z}} \longrightarrow 2\ 1\ 3$$

PST-4. Relative Clause Reduction

$$\underset{1}{\underline{X + \text{Nom}}} + \underset{2}{\underline{\text{WH*Nom} + \text{Tns} \left\{\begin{matrix}\text{HAVE} + \text{EN} + \text{Vis} \\ \text{BE} + Y\end{matrix}\right\}}} + \underset{3}{\underline{W}} \longrightarrow$$

1 3

It is by this rule that post-nominal modifiers are generated. For at least two reasons it is very important that there be a device which allows us to retain the information that the EN + Vis and the Y in this rule is, in fact, the "remains" of a relative clause, although the device by which this will be accomplished is not well understood.

The first reason, as was suggested above in II.A.2, is that, as a pre-nominal modifier, it must be distinguished from one originating from an appositive relative clause.

The second is explained in the note following PST-5.

PST-5. Modifier Transposition

$$\underset{1}{X + Det\ \ (Mf)}\ \ \underset{2}{Y + N + N^{o}}\ \ \underset{3}{\left\{\begin{matrix} ADJ \\ EN + Vis \\ \left\{\begin{matrix} EN + Vtn \\ ING + Vi \end{matrix}\right\} \end{matrix}\right.}\ \ \underset{4}{(ADJ + LY)\Big\}}\ \ \underset{5}{+ Z} \longrightarrow$$

1 4 3 2 5

The second reason for preserving the fact that what is contained between the large braces in the rule above originated from a relative clause is that the transposition rule will not apply unless whatever follows elements 3 and 4 of this string was the Y of the matrix string when the relative clause was applied. Thus to:

the dog sleeping under the car

the transposition rule will not apply, but to:

the dog sleeping snored loudly (from PST-4),

it will.

Conjoining Rule

CT-1.

temporary

Let A_3 stand for: (Av) Ac

Let A_2 stand for: $\left\{\begin{matrix} (Av)\ \left\{\begin{matrix} AJ \\ Ab \end{matrix}\right\} \\ EN + Vis \\ (ADJ + LY)\ \left\{\begin{matrix} EN + Vtn \\ ING + Vi \end{matrix}\right\} \end{matrix}\right\}$

Let A_3 stand for: Aa [17]

$$\left.\begin{matrix} \underset{1}{X\ \ (Mf)}\ \ \underset{2}{A_n}\ \ \underset{3}{(M)\ \ (Y)} \\ \underset{4}{X\ \ (Mf)}\ \ \underset{5}{A_m}\ \ \underset{6}{(M)\ \ (Y)} \end{matrix}\right\} \longrightarrow \quad 1\ 5 \text{ and } 2\ 6$$

where $m \geq n$

CT-1.

$$\frac{X}{1}\ \frac{(ADJ + LY)}{2}\ \frac{\begin{matrix}ADJ\\EN + Vis\end{matrix}\quad\begin{matrix}EN + Vtn\\ING + Vi\end{matrix}}{}\ \frac{Y}{3} \quad \text{----} \quad 1\ 5 \text{ and } 2\ 3$$

$$\frac{X}{4}\ \frac{(ADJ + LY)}{5}\ \frac{\begin{matrix}ADJ\\EN + Vis\end{matrix}\quad\begin{matrix}EN + Vtn\\ING + Vi\end{matrix}}{}\ \frac{Y}{6}$$

It is probable that this rule is an example of a more general rule for conjoining like constituents in identical strings.

The device mentioned in PST-4 for retaining the information that elements 2 and 5 were originally relative clauses will mark them as such here.

V. Reference Lists

In these lists, lexical items will be marked with an L, lists of examples with an E.

1. Ac (E)

beautiful
big
enormous
gigantic
handsome
large
long
lovely
small
tremendous

2. Ab (E)

can take LY

abundant
angry
bright
broad
cheap
cheerful
cold
complete
cool
cozy
deep
demure
energetic
enthusiastic
expensive
genuine
gentle
heavy
helpless
hungry
loud
narrow
neat
obnoxious
peaceful
personal
poor
popular
pretty
quick
quiet
sad
sharp
soft
solemn
solid
specific
strict
strong
sweet
thin
unique
vivacious
warm
wild

2. (cont.)

cannot take LY

clean
dark
dirty
furry
fuzzy
hard
high
hot
juicy
old
round
shiny
smelly
square
straightly
thick
ugly
useful
weak
wealthy
wet
widespread
wooly
young

3. Aa

colors

4. Vin (L) (with ING)

aching
advancing
approaching
barking
beaming
blushing
burning
chanting
clamoring
crying
dancing
disappearing
dying
falling
flying
groaning
growing
increasing
lasting
laughing
marching
passing
revolving
rising
shining
shivering
singing
sleeping
snoring
starving
stepping
suffering
vanishing
vibrating
weeping
winding
winning
working

5. Vtn (L) (with EN)

transposable

appointed
broken
chosen
closed
constructed
covered
disguised
educated
elected
finished
folded
forgotten
forsaken
frozen
given
hidden
known
lighted
loaded
manufactured
molded
painted
patented
pickled
polished
prepared
rejected
sealed
spoken
stolen
stuffed
torn
wounded
woven
wrapped
drawn
driven
dug
eaten
fed
found
hit
killed
left
made
moved
picked
played
read
ridden
rowed
seen
sent
shot
shut
taught
written

non-transposable

bought
brought
built
carried
caught
crossed
discovered

6. ADJ LY (E)
must accompany a non-transposable verb in the transposition rule

anxiously
beautifully
carefully
cautiously
completely
craftily
easily
endlessly
freshly
furiously
gaily
gracefully
heavily
incredibly
laughingly
lightly
loudly
merrily
neatly
needlessly
newly
nicely
noisily
passionately
quickly
rapidly
silently
skillfully
softly
stealthily
surreptitiously
tightly
well
wickedly

7. Vis (L) with EN)

decayed
escaped
grown
spoiled
vanished

8. Vt2 (L)

alarm
amaze
amuse
astonish
bore
charm
depress
discourage
disgust
encourage
frighten
interest
please
satisfy
shock
surprise
terrify

9. Count noun modifiers (E)

apple pie
woman driver
town crier
family reunion
city editor
blueberry muffin
kitchen sink
feather pillow
church wedding
village blacksmith
submarine warfare
rag doll
corncob pipe
clock radio
afternoon tea
oyster stew
student dormitory
mob activity
government interference
war effort
world power

10. LY-words (E)
may appear in a pre-nominal position only if derived from a verb phrase

drastic
eloquent
equal
eventual
gradual
hasty
immediate
native
partial
previous
steady
thorough

11. LY-words (E)
may appear in a pre-nominal position by three-stage rule or by nominalization

angry
bitter
cautious
clear
complete
conscious
emotional
generous
good
graceful
poor
safe
silent
skillful
vicious
violent

12. M (E)

Mf
actual
central
certain
chief
diverse
main
major
primary
principal
separate
sure
total
ultimate
usual

Me
two-page
six-inch
three-hour
twenty-mile
sixty-dollar
six-foot
ten-minute
long-range

Md
nationalities

Mc
mass nouns of material

Mb
agricultural
artificial
capital
civic
congressional
constitutional
cultural
daily
domestic
ecclesiastical
economic
ethical
financial
fiscal
foreign
individual
legal
liberal
medical
military
morphological
national
personal
philosophical
political
racial
religious
social
spiritual
technical
theological

Ma
dire
distinct
marked
mere
prerequisite
utter

Footnotes

[1] The term "modifier" will be used throughout this study, although a more apt term might be "attribute." The concept of modification is here taken to be a grammatical one, although no definition will be proposed, and the term "modifier" will be used in its intuitive sense. Spelled Modifier, it will refer to a specific class introduced in the CS rules (see Section II.B.). Also see Lees, "Grammar of English Nominalizations," IJAL, Part II, 3, July, 1960, p. 176, note 60.

[2] Lees, p. 20.

[3] See Lees, p. 16. Presumably, such questions could be handled by a semantic theory of the form proposed by J. Katz and J. Fodor, "The Structure of A Semantic Theory," Language, 39, pp. 170-210, 1963.

[4] Word, 19.2, pp. 208-31, August, 1960.

[5] See Lees. pp. 86-98, and Carlotta Smith, "A Class of Complex Modifiers in English," Language, 37.3, Part I, 1961, pp. 246-48.

[6] Fillmore, pp. 209-10.

[7] That these intonation differences show up most clearly in conjunctive sentences might be linked to the fact that a phrase with this "incidental" modifier is generally used with a definite article to compare, contrast, or combine with a similar phrase. Although the task of the grammar is not to account for language use, it is possible that a separate theory of usage could use this grammatical information to explain such facts. Examples include:

The light-haried Norwegians and the dark-haired Italians
The blue sky and the green ocean
The sweet apples and the juicy berries

[8] For example, it is likely that appositive relative clauses form a subset of parenthetic clauses such as:

The children, chatting gaily, ran outside.

However, it is not clear by what means a parenthetic clause is introduced into a string. If it is by means of an embedding rule, then the string must contain a formative which may be expanded (Fillmore, pp. 208-12). But to what node should this formative be attached? To avoid a sentence like:

*He was reading, which was unusual, a book

we might want it to be attached to a node as "far up" on the tree as VP. But for a sentence like:

he was reading quite slowly, which was unusual

where the parenthetic clause refers to slowly, we might want to attach it farther "down" the tree in a later CS rule.

[9] Pp. 113-200. Lees tentatively chooses to refer to the type of sequence with the stress pattern (^+´) as a "nominal phrase," to be distinguished from the "compound" (´+`). Each of the items in the sample list 9, however, appears to fit into one of Lees' compound classes.

Admittedly, too little is yet known about stress to be dogmatic on points in which it is involved, yet there seem to be counterexamples to the possible view suggested by Lees that certain morphemes always take certain stress patterns in composition (p. 120). To the example of apple pie versus apple cake could be posed chocolate cake, or page editor and city editor, or corncob pipe and peace pipe.

[10] It is assumed here that the symbol Det will be expanded with a Q, later to be developed into cardinal and ordinal numerals, as its right-most node (see rule CS-25).

[11] Thus it will be noticed here that, by considering the two groups Md and Mc (see List 12) to be introduced in the pre-nominal position as a result of the expansion of M in CS rule 16, we are disallowing the possibility of these modifiers being found in the predicate position, as in:

She's German
The watch is Swiss
This tie is silk
The knife is steel

Because of shared grammatical properties as discussed above, however, these strings will be considered as elliptic forms of longer strings. The phrase "a six-page report" may perhaps be derived from "the report is six pages long," but until more is known about these duration words, the present analysis must suffice.

[12] Barritt, Carlyle Westbrook, in The Order Classes of Modifiers in English, University of Virginia dissertation, 1952, chapter 1, fails to recognize some of these decidedly grammatical distinctions, but bases his classification of "descriptive adjectives" on the manner in which they "form IC's with the following noun." It appears that much confusion results from his failure to note both these distinctions and that which must be made between compounds and modifier-plus-noun phrases.

[13] Lees, pp. 9, 97.

[14] Lees, pp. 11, 23.

[15] Fillmore, p. 225.

[16] The format for these rules was originated by C.J. Fillmore, op. cit.

[17] See Lists 1, 2, and 3.

[18] Phrases such as <u>skillful pianist</u> and <u>graceful dancer</u> might be thought to be derived from strings like:

the pianist is skillful

the dancer is graceful.

But the implied meaning of these phrases would seem to suggest source strings of the following sort:

the person is skillful at playing the piano

the person is graceful at dancing.